

Abstract

An adaptive signal processing system utilizes a pseudo-median cascaded canceller to compute a set of complex adaptive weights and generate a filtered output signal. The system includes a plurality of building blocks arranged in a Gram-Schmidt cascaded canceller-type configuration for sequentially decorrelating input signals from each other to thereby yield a single filtered output signal. Each building block includes a local main input channel which receives a local main input signal, a local auxiliary input channel which receives a local auxiliary input signal, and a local output channel which sends a local filtered output signal. Each building block generates a complex adaptive weight which is the sample median value of the real and imaginary parts of the ratio of local main input weight training data to local auxiliary input weight training data, and each building block generates a local output signal utilizing the complex adaptive weight. The effect of non-Gaussian noise contamination on the convergence MOE of the system is negligible. In addition, when desired signal components are included in weight training data they cause little loss of noise cancellation.